

# Pedagogy and the New Web

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“English scientist Tim Berners-Lee invented the World Wide Web in 1989.” That’s what it says [in Wikipedia](#).

Well, actually, it wasn’t quite like that. In March 1989 Berners-Lee submitted a proposal for a system that put together the main components of the web: web pages, links between the pages, universal address for resources, web browser.

But that was based on an earlier project of his called [Enquire](#) to search for resources online, which is where Berners-Lee first used the term “Web”.

And that was based on the concept of hypertext which was [invented by Ted Nelson](#), an American computer pioneer, in the 1960s.

That in turn was based on the concept of a [Memex](#) to connect pages of information, proposed by the American scientist Vannevar Bush in 1945.

Which in turn was inspired by the [Encyclopedia Britannica](#), which was influenced by Diderot’s 18<sup>th</sup> century [Encyclopédie](#). And so on. And so on.

The point I want to make is that an invention as fundamental as the World Wide Web doesn’t spring fully formed into the mind of the inventor. Berners-Lee himself [put it like this](#):

*“The Web arose as the answer to an open challenge, through the swirling together of influences, ideas, and realizations from many sides, until, by the wondrous offices of the human mind, a new concept jelled. It was a process of accretion, not the linear solving of one well-defined problem after another.”*

“Swirling together of influences”, what a lovely phrase.

That’s the genius of invention – to see how resources that already exist can be made to fit together in new ways. There’s a word for it: “bricolage”. [Bricolage is creative play with materials that are ready to hand to create something new](#). In the case of the World Wide Web, not just new but powerful and expansive.

I also mentioned that the World Wide Web was based on an earlier project from Tim Berners-Lee, a full ten years earlier. He called that project Enquire and it linked together pages of information across different computers. Here’s another key concept: “[persistent intent](#)”. It takes time to develop something that changes lives. If anyone tells you that their company has just invented a wonderful new gismo that will transform education, then I suggest you cough politely and walk away. It doesn’t work like that.

Bricolage and persistent intent are at the heart of all innovation. So why focus on invention of the web in particular? Because it also demonstrates the power of networking. When he developed the World Wide Web, Tim Berners-Lee was working at CERN, the European Organisation for Nuclear Research. It was, and still is, one of the most networked organisations in the world. Scientists visit

CERN from all over the world to share ideas and work on joint projects. Berners-Lee knows the importance of networking, and the need to create powerful tools to share ideas.

He developed the World Wide Web to do that. It was also part of his genius that he made the web open to all, rather than patenting and protecting his ideas. What a superb concept – a dynamic web of ideas and resources, open to all.

So what went wrong? Why have we reached the state where around [30 per cent of worldwide internet traffic is porn](#). Where schools put up firewalls to protect students from undesirable web influences and online bullying. Where the dark web hosts sites that sell all manner of drugs, guns, counterfeit money, stolen subscription credentials, hacked Netflix accounts and software that helps you break into other people's computers.

We have, in our pockets, devices that can access the entirety of information known to humankind. And we use them to look at pictures of cats and get into arguments with strangers.

The founding strength of the web – its openness and accessibility – is also its downfall. It means that companies can exploit that openness to peddle smut and junk. It means that we can fire off a response to a tweet before we've thought whether it's wise to do so.

But... let's be positive. The World Wide Web is no more and no less than a giant interconnection of people and computers. And people can be networked together in many ways, to serve many purposes.

Some influential people, including Berners-Lee have devised a [Contract for the Web](#), a set of nine principles for a more humane World Wide Web, to hold Governments and companies to account when they fall short.

Others are attempting to refashion the web in a [more decentralised way](#), so that governments and companies don't control who sees what and who says what.

Still others are putting education, ethics and trust at the centre of IT innovation, crafting tools for the web that support inquiry learning, shared knowledge building and consensus forming. The World Wide Web offers new possibilities for learning through conversation and collaborative inquiry. At The Open University I have been working with the BBC and other partners on an open web platform called [nQuire](#), for people and organisations to run big scale investigations into themselves, their communities and their environment.

The key is to let pedagogy drive the innovations in education, not technology. We are discovering [new and powerful ways to teach and learn](#), such as spaced learning, crossover learning, design thinking, dynamic assessment, threshold concepts, teachback, translanguaging. There's a wonderful swirling together of positive influences on education from research and innovation in the science of learning. We have the opportunity to build not just a more humane web, but a more educative one.

That's where TPEA can make a huge difference. The TPEA has been formed from two organisations, ITTE and Mirandanet, that have been networking with teachers, EdTech developers and policy makers for over 30 years – building partnerships, influencing policy and practice, developing capabilities of teachers, and working with companies to build tools based on good pedagogy.

Now, as a unified organisation, TPEA has a big new challenge – to help build the World Wide Web for education. The people working on projects for a more humane and decent web sorely need the contributions of TPEA. I hope TPEA can be at the centre of efforts to add pedagogy to the web, alongside openness and accessibility. We are the people who understand pedagogy. We know how to create new forms of learning through conversation, new ways of knowledge building – and how to make them fun and engaging. Pedagogy founded on trust and ethics goes beyond the principles enshrined in the Contract for the Web to offer a new set of effective practices.

To add pedagogy to the web means taking a design stance. It means getting involved with the new “swirling together of influences” that could reshape the web. ITTE and Mirandanet are rightly proud of their distinguished past. Now they can look forward to an even more distinguished future as shapers of a new decent web for learning.

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